

REMARKS

In the Office Action dated June 16, 2004, claims 19-28 and 30-36 are rejected under 35 U.S.C. §103(a), and claim 29 is objected to. Claim 37 has been allowed. Applicants believe that the rejections are improper based on at least the reasons set forth below.

In the Office Action, claims 19-28 and 30-36 are rejected under 35 U.S.C. §103. More specifically, claims 19-21, 25-27, 30 and 33-36 are rejected in view of U.S. Patent No. 5,339,051 to Koehler et al. (“*Koehler*”) and U.S. Patent No. 5,609,616 to Schulman et al. (“*Schulman*”), claims 22 and 23 are rejected in view of *Koehler* and *Schulman* and in further view of U.S. Patent No. 4,065,735 to Palfreeman et al. (“*Palfreeman*”), claims 24 and 28 are rejected in view of *Koehler* as modified as applied to claim 22 above, and in further view of U.S. Patent No. 6,127,768 to Stoner et al. (“*Stoner*”), and claims 31 and 32 are rejected over *Koehler* as modified to claim 19 above, and in further view of U.S. Patent No. 5,751,418 to Murase (“*Murase*”). Applicants submit that the cited references, alone or in combination, fail to disclose or suggest the claimed invention. Further, Applicants believe that the Patent Office has improperly relied on hindsight reconstruction to support the combination and/or modification of the cited art.

Of the pending claims at issue, claim 19 is the sole independent claim. Claim 19 recites a passive microphone for wirelessly transmitting sound information to a receiving unit. The passive microphone includes an antenna and a piezoelectric device connected to the antenna. The antenna receives electromagnetic excitation energy from the receiving unit and wirelessly transmits electrical signals to the receiving unit. The piezoelectric device is connected to the antenna such that the piezoelectric device receives and stores electromagnetic excitation from the antenna and converts detected acoustic signals into electrical signals bearing sound information.

In contrast, Applicants believe that the cited art, even if combinable is distinguishable from the claimed invention. With respect to the primary reference, *Koehler* fails to teach or suggest a piezoelectric device connected to an antenna that receives and stores electromagnetic excitation energy from a receiving unit as required by the claimed invention. *Koehler* merely mentions a piezoelectric device in the context of U.S. Patent No. 4,362,961 to Gerber et al. (“*Gerber*”) in relation to resonators and their support structures. The Patent

Office relies on this reference for a piezoelectric device that is a purported substitute for the sensor/oscillator 266 of the passive beacon illustrated in Fig. 17 of *Koehler*. However, the encapsulated piezoelectric resonator device in *Gerber* is not connected to an antenna for receiving and storing electromagnetic excitation energy from the antenna such that at least one acoustic signal is detected and converted into at least one electrical signal which includes sound information. Therefore, it would not have been obvious to a person skilled in the art to use the encapsulated piezoelectric device disclosed in *Gerber* as a piezoelectric device as claimed.

Further, *Koehler* does not disclose a piezoelectric device that is used as the local chargeable power source. *Koehler* teaches that the received electromagnetic energy is stored in a local chargeable power source using conventional electronic charging circuitry. *Koehler* suggests that the local chargeable power source may be a storage capacitor or an electrochemical cell. *See Koehler*, col. 11, lines 21-26. There is no hint or suggestion for using the sensor and oscillator itself as the local chargeable power source. Also, *Koehler* fails to disclose or suggest a piezoelectric device that wirelessly transmits electrical signals to the receiving unit as required by the claimed invention. As admitted by the Patent Office, “*Koehler* does not disclose the electrical signals are wirelessly transmitted back to the same receiving unit that transmitted the excitation energy or via the same antenna.” *See* Office Action, page 2. Therefore, *Koehler* on its own is deficient with respect to the claimed invention for at least these reasons.

Like *Koehler*, *Schulman* fails to provide a piezoelectric device that receives and stores electromagnetic excitation energy and converts that energy into electrical signals bearing sound information as required by the claimed invention. *Schulman* is directed to a hearing aid system that includes an external system and an implanted cochlear stimulator (“*ICS*”). *See Koehler*, Fig. 1. The external system includes a wearable processor and a headpiece that includes an antenna. The *ICS* includes a receiver for receiving data transmissions from the wearable system and a telemetry transmitter for transmitting *ICS* status from the *ICS* to the wearable system. *See Schulman*, col. 5, lines 3-9. The Patent Office attempts to rely on the telemetry function of the *ICS* in *Schulman* to demonstrate a system where electrical signals bearing sound information are wirelessly transmitted back to

the same receiving unit that transmitted the excitation energy or via the same antenna. Irrespective of the antenna functionality, *Schulman* does not disclose or even suggest using a piezoelectric device that is connected to an antenna for storing electromagnetic excitation energy and converting that energy into electric energy for transmitting signals bearing sound information as required by the claimed invention.

Furthermore, *Schulman* does not disclose or suggest a system where electrical signals bearing sound information are wirelessly transmitted back to the same receiving unit that transmitted the excitation energy or via the same antenna as required by the claimed invention. The Examiner asserts that *Schulman* discloses a device (i.e., receiving unit) (Figure 1, reference 10) which sends external energy (i.e., “electromagnetic excitation energy”) containing sound information wirelessly to a remote device and also receives data from the remote device via the same antenna. *See* Office Action, pages 2-3. In the *Schulman* reference, the sound information and the purported excitation energy originate from the same device (i.e. receiving unit). In claim 19, a receiving unit sends external energy, but it does not send external energy containing sound information. Rather, the receiving unit receives the sound information that was transmitted by the passive microphone. In *Schulman*, the telemetry transmitter of the ICS does not transmit electrical signals bearing sound information. Rather, it merely transmits data indicating proper operation of the device. Thus, the information and energy transfer scheme of *Schulman* is distinguishable from the claimed invention. Therefore, *Schulman* and *Koehler* even if combinable are distinguishable from the claimed invention based on at least these reasons.

To support the combination and/or modification of the cited art to allegedly arrive at the claimed invention, the Patent Office has had to apply hindsight reconstruction to selectively piece together teachings of the cited art in an attempt to recreate the claimed invention. Without the requisite motivation to combine/modify these teachings, however, this combination/modification is clearly improper as being hindsight reconstructive. *See In re O'Farrell*, 853 F.2d., 894, 902-903 (Fed. Cir. 1988). As the Federal Circuit further explained, “the mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the

desirability of the modification.” *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-84 (Fed. Cir. 1992).

It is clear from the discussion above that the cited art alone or in combination, fail to teach or suggest a piezoelectric device that is connected to an antenna that receives electromagnetic excitation energy from the receiving unit and wirelessly transmits electrical signals to the receiving unit such that the piezoelectric device receives and stores electromagnetic excitation from the antenna and converts detected acoustic signals into electrical signals bearing sound information as required by the claimed invention. Moreover, the teachings of the cited art are so disparate that one skilled in the art would not be motivated to combine and/or modify the teachings of same contrary to the Patent Office’s position.

For example, in *Koehler*, the emphasis relates to an attempt at taking physical measurements with a remote passive sensor. In contrast, *Schulman* is aimed at controlling and monitoring an implantable medical device. In these references, the fields of endeavor are different and the problems to be solved are not reasonably related. *Koehler* provides external energy to charge a local power source and does not suggest the desirability of providing feedback to the energy radiating source as to the operation of the remote sensor. With an implantable medical device, such as the ICS in *Schulman*, there is a need to provide operational feedback because the ICS electrodes are stimulating human auditory nerves and the health and safety of the patient is a concern. There is no such need in the measurement sensors disclosed in *Koehler*. Therefore, Applicants do not believe that one skilled in the art would be inclined to modify, and/or combine the cited art to arrive at the claimed invention.

Based on at least the reasons above, Applicants believe that the cited art is clearly distinguishable from the claimed invention. Therefore, Applicants respectfully submit that the cited art even if combinable fails to render obvious the subject matter as claimed in claims 19-21, 25-27, 30 and 33-36. Accordingly, Applicants respectfully request that the rejection of claims 19-21, 25-27, 30 and 30-36 be withdrawn.

In the Office Action, claims 22-24, 28 and 31-32 are rejected under 35 U.S.C. § 103. More specifically, claims 22-23 are rejected in view of *Koehler* and in further view of U.S. Patent No. 4,065,735 to Palfreeman et al. (“*Palfreeman*”), claims 24 and 28 are rejected in

view of *Koehler* and in further view of U.S. Patent No. 6,127,768 to Stoner et al. ("*Stoner*"), and claims 31 and 32 are rejected in view of *Koehler* and in further of U.S. Patent No. 5,751,418 to Murase et al. ("*Murase*"). The Patent Office primarily relies on *Koehler* and thus relies on the remaining cited art as provided in the Office Action to remedy, allegedly the deficiency of same. None of the references alone or in combination with *Koehler* disclose or even suggest a passive microphone comprising a piezoelectric device connected to an antenna that receives and stores electromagnetic excitation energy from a receiving unit and transfers electrical signals bearing sound information to the receiving unit, as required by the claimed invention. As previously discussed, *Koehler* on its own is clearly deficient with respect to the claimed invention. Further, the remaining cited art cannot be relied on solely or in combination to remedy the deficiencies of *Koehler*. Indeed, the Patent Office merely relies on *Palfreeman* for its alleged teachings regarding a piezoelectric surface having acoustic wave resonance patterns. Also, the Patent Office Merely relies on *Stoner* for its alleged teachings regarding piezoelectric materials that include lithiumniobate to support electroacoustic transduction. Finally, the Patent Office merely relies on *Murase* for its alleged teachings regarding an electroacoustic transducer which differentially converts the output of piezoelectric sensors into an electric signal. Therefore, Applicants believe that the cited art fails to render obvious the claimed invention. Accordingly, Applicants respectfully request that the rejection of claims 22-24, 28 and 31-32 be withdrawn.

For the foregoing reasons, Applicants submit that the present application is in condition for allowance and earnestly solicits reconsideration of same.

Respectfully submitted,

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